Siemon PON

Fiber Cabling Solutions

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Siemon Enterprise PON Fiber Cabling Solution

Siemon Enterprise Passive Optical Network (PON) Fiber Cabling Solution improves the modularity, flexibility and management of PONs that are emerging as an alternative to switched networks in a variety of enterprise LAN environments.

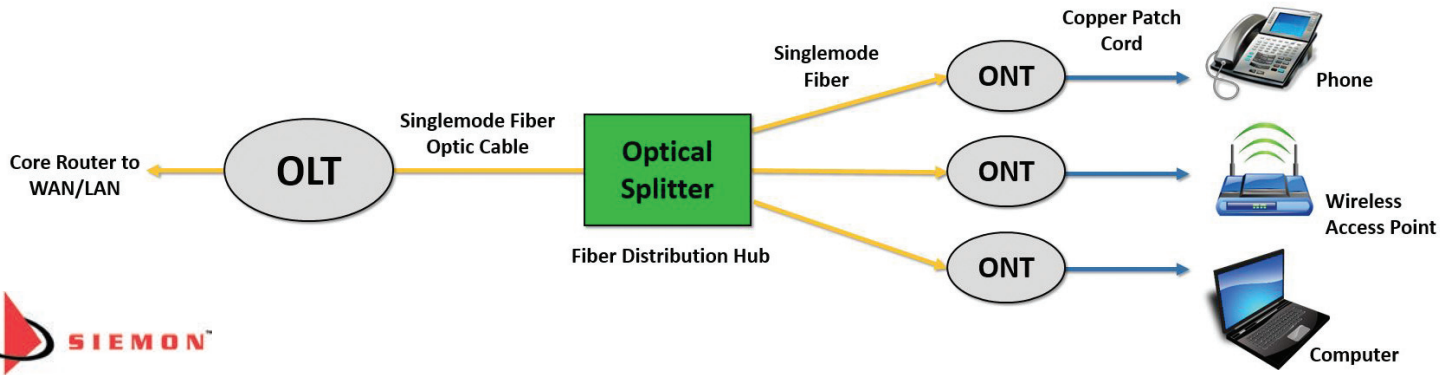
Siemon PON Fiber Cabling Solution Benefits

- Modular, cost-effective, high-performance solution
- Versatile splitter installation to support a variety of applications
- Multiple enclosures options for efficient fiber distribution and zone cabling
- Extensive range of end-to-end passive infrastructure components

Capable of distributing voice, video and data to the desktop over one singlemode fiber, PONs offer the benefit of extended transmission distances, as well as easy deployment and reduced pathway and conduit space.

In an enterprise PON, a singlemode optical fiber runs from an Optical Line Terminal (OLT) to a passive optical splitter where it is divided into multiple fibers and connects to Optical Network Terminals (ONTs) at work areas that convert the optical signal for transmission over copper twisted-pair cabling.

As a leading network infrastructure specialist, the Siemon Enterprise PON Fiber Cabling Solution includes cabling, assemblies, connectivity, cable management and enclosures that enhance enterprise PONs — from the OLT to the work area equipment.



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Fiber Splitters

Siemon Fiber Splitters are ideal for PONs and other singlemode fiber applications requiring high performance splitting of optical signals. The splitters use advanced Planar Lightwave Circuit (PLC) technology to enable multiple fiber connections with stable optical performance, low insertion loss, high uniformity and low polarization dependent loss.

Splitter Cassettes

Siemon Fiber Splitter cassettes utilize the same footprint as Quick-Pack® adapter plates, including the patented integrated latch. They enable flexible mounting in both rack and non-rack applications using RIC enclosures, RIC panels or SWIC enclosures.

Available with LC, SC and MTP connectors and with SC and LC inputs, the splitter cassettes utilize bend insensitive singlemode fiber and feature front and rear exit options. Ideal for high-density fiber distribution hubs, the LC and SC versions are available in multiple split ratios, including 1x8, 1x16, 1x32, 2x32 and dual 1x16. The MTP version is available in a 1x32 split ratio.

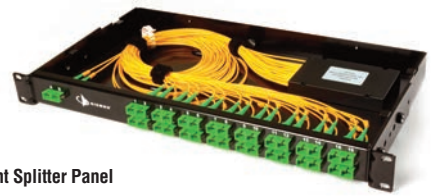
Rack Mount Splitter Panel

The Rack Mount Splitter Panel incorporates splitter technology into a 19 inch rack mount unit that enables fast and simple mounting in a standard rack, cabinet or enclosure.

Available in LC and SC versions, the rack mount splitter panel is available in six different split ratios to support a variety of PON applications, including 1x8, 2x8 1x16, 2x16, 1x32, 2x32 and dual 1x16.

Front Exit Splitter Cassette

Rear Exit Splitter Cassette



Rack Mount Splitter Panel

Fiber Adapters and Modules

Siemon Fiber Adapters and Modules are ideal for creating flexible fiber interconnects and cross-connects between OLTs and splitters and between splitters and ONTs, offering the benefits of structured cabling, including ease of upgrades and MACs. They feature a patented integrated latch, which makes installation and access easier.

Quick-Pack® Adapter Plates

Quick-Pack® adapter plates available in Singlemode SC/APC, LC/APC and MTP/APC can be housed alongside splitter cassettes in enclosures and panels.

Plug and Play Modules

Ideal for deploying a high density MTP PON solution using zone distribution, Siemon SC/APC to MTP and LC/APC to MTP plug and play modules can be housed alongside splitter cassettes in enclosures and panels. These durable, lightweight modules feature compact housing with optimized adapter spacing for easy access in high density applications.

LC/APC Quick-Pack Adapter Plate

SC/APC Quick-Pack Adapter Plate

MTP Quick-Pack Adapter Plate

LC/APC to MTP Plug & Play Module

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Fiber Distribution Enclosures and Panels

Fiber Rack Mount Interconnect Center

Siemon RIC3 enclosures are designed for enhanced fiber management and ease of use. They support Siemon fiber splitter cassettes, Quick-Pack adapter plates and plug and play modules without sacrificing fiber protection and accessibility. Features include a fully removable tray, improved labeling, standard front and rear door locks, and single-finger door latches. With superior cable management, port identification accessibility and security, the RIC3 Rack Mount Interconnect Center is the best way to protect PON splitter connections.

RIC3 Enclosure

Fiber Connect Panel

Siemon's Fiber Connect Panel available in rack and drawer versions accepts up to 3 Quick-Pack adapter plates, splitter cassettes or plug and play modules in a 1U space. The drawer version features a tray that slides out from the front or rear for easy access to connections.

Fiber Connect Panel

Fiber Rack Mount Panel

Siemon's RIC panels available in 1U and 4U sizes are ideal for use with racks, cabinets, wall mount cabinets, zone enclosures and ceiling enclosures for fiber distribution in PONs. They feature RIC adapter plate openings in a standard 19 inch rack mount design to support fiber splitter cassettes, Quick-Pack adapter plates and plug and play modules. The RIC 4U Panel includes expanded depth rear cable managers.

RIC 4U Panel

Fiber Distribution Hubs (FDH)

Expanded Wall Mount Interconnect Center (SWIC)

PON fiber distribution hubs are typically located close to work areas, essentially creating a mini-TR or zone for space savings and efficient distribution of fiber to ONTs. With the ability to accept up to 8 Quick-Pack adapter plates, 4 front leg exit splitter cassettes via the bracket and up to 6 LC or SC MAX Modules for inputs, Siemon's Expanded SWIC is the ideal PON fiber distribution hub.

Expanded SWIC

LC MAX Module

SC MAX Module

Wall Mount Cabinets

Using Siemon's RIC 4U panel, traditional wall mount cabinets are ideal for creating high-capacity fiber distribution hubs.

Expanded SWIC Splitter Cassette Bracket

PON Zone Distribution

Zone cabling deployments provide the optimum balance of performance and flexibility in today's enterprise PON environments. Siemon's ceiling, floor or wall-mounted zone enclosures situated to serve groups of work areas enables shorter easy-to-manage fiber links connect to ONTs.

Low Profile MAX Unit Zone and SWIC Enclosures

PON zone cabling deployments can be achieved by mounting Quick-Pack adapter plates in any SWIC enclosure, or with fiber MAX Modules mounted in the Low-Profile MAX Zone Unit Enclosure.

Low Profile MAX Unit Zone Enclosure

Ceiling Enclosures

Zone cabling can also be deployed using traditional 609 mm x 609mm (2 ft. x 2 ft.) ceiling mount enclosures.

SWIC Enclosure

Fiber Connectivity

XLR8™ Mechanical Splice Termination System

Siemon XLR8 mechanical splice termination kit with an exclusive dual-process activation tool and pre-polished XLR8 mechanical splice singlemode connectors available in singlemode and SC/APC and LC/APC dramatically reduces termination time per connector. UPC connectivity is available to support PON equipment that utilizes UPC ports and uplinks.

XLR8 Mechanical Splice Connector

Fiber Cable

Bulk Cable

Available in a variety of fiber counts, Siemon XGLO singlemode fiber cable is available in tight buffer, interlocking armor tight buffer, indoor/outdoor and outside plant loose tube varieties. The cables comply with all ITU-T G.652, Telcordia, ANSI/TIA and ISO/IEC standards. Bend-insensitive fiber available upon request.

Singlemode Fiber Cable

PON Work Area Solutions

Simplex Fiber MAX® Modules

Ideal for making connections to ONTs and a variety of end devices in PON applications, simplex fiber MAX modules in SC/APC and LC/APC can be installed in Siemon MAX faceplates, Low-Profile MAX Zone Unit Enclosure and Universal Modular Furniture Adapters for mounting ONT connections in modular furniture systems.

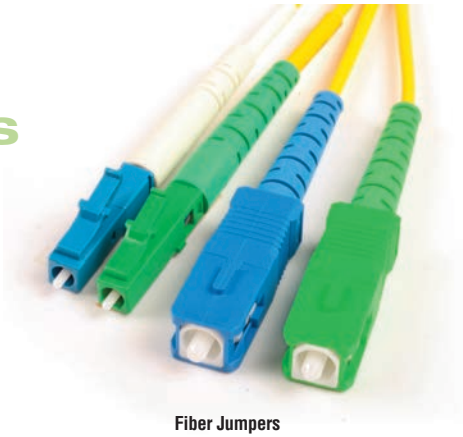
Copper Patch Cords with Colored Clip

Siemon category 6 and 6A UTP and category 6A shielded patch cords are used for connecting ONTs to computers, phones, printers, wireless access points and a variety of other end devices. These cords include optional colored clips available in 9 colors for PON field color coding.

Fiber Assemblies

Simplex Fiber Jumpers

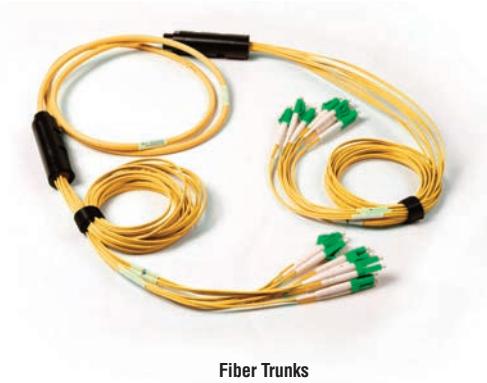
Siemon bend-insensitive singlemode simplex fiber jumpers available in SC/APC, SC/UPC, LC/APC and LC/UPC are ideal for making flexible connections between OLTs splitters and ONTs. Also used for connecting OLTs to optional interconnects/cross-connects and for connecting splitters or outlets to ONTs at the work area, these jumpers comply with ITU-T G657.A2 standards.



Fiber Jumpers

Fiber Trunks

Available in custom lengths and configurations, Siemon XLGLO Singlemode Fiber Trunks are ideal for creating backbone and fiber distribution links between OLTs, splitters and ONTs as an alternative to field-terminated components. Offered in singlemode fiber with SC, LC, ST and MTP connectors, these factory tested and terminated trunks feature Siemon's smaller diameter RazorCore™ fiber. Bend-insensitive fiber available upon request.



Fiber Trunks

LC Flat MAX Module

SC Flat MAX Module

Copper Patch Cords

MAX Faceplate

The Ultimate in Flexibility and Modularity for Today's PONs

Siemon's modular fiber splitter cassettes, Quick-Pack® adapter plates and plug and play modules utilize the same footprint for easy mounting in RIC Enclosures, RIC Panels or in Siemon's lower profile Expanded Wall Mount Interconnect Center (SWIC3G-E). Also available is a rack-mount splitter panel for mounting in any standard 19 inch rack. When deployed with Siemon fiber jumpers, fiber trunks, faceplates and patch cords, these solutions enable end-to-end PON deployments in a variety of configurations for the ultimate flexibility and space savings in PON fiber distribution.

PON fiber distribution hubs (FDH) can be located within telecommunications rooms or placed in wall-mount cabinets closer to work areas. When locating the FDH in a telecommunications room, fiber distribution zones can be deployed to enable shorter, easy-to-manage fiber links to individual work areas. Siemon Enterprise PON Fiber Cabling Solutions include LC, SC or MTP fiber connectivity to suit a variety of enterprise environments.

End-to-End PON Using Siemon LC or SC Fiber Connectivity

Entrance Facility

- LC or SC Adapter Plates can be housed in RIC Enclosures or RIC Panels to deploy a fiber interconnect for backbone distribution from the OLT to FDH
- Fiber Jumpers connect ports on the OLT to the fiber interconnect
- LC or SC Fiber Trunks or Cables connect to the FDH

Fiber Distribution Hub (FDH)

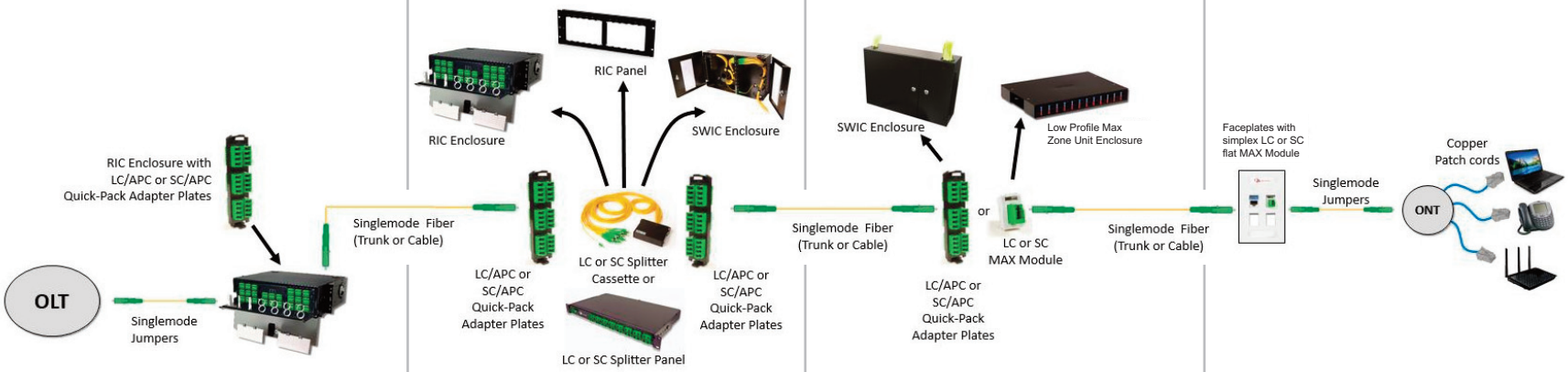
- LC or SC Splitter Cassettes and Adapter Plates can be housed in RIC Enclosures, RIC Panels or SWIC Enclosures
- RIC Enclosures, RIC Panels and Splitter Panels can be housed in any standard wall-mount cabinet
- LC or SC Fiber Trunks or Cables connect to the zone distribution or work area

Optional Zone Distribution

- LC or SC Adapter Plates can be mounted in SWIC Enclosures or RIC Panels mounted in ceiling enclosures
- The MAX Zone Unit Enclosures with LC or SC flat MAX Modules can also be used for zone distribution
- LC or SC Fiber Trunks or Cables connect the zone to the work areas

Work Area

- Faceplates use simplex LC or SC flat MAX Modules
- Singlemode Jumpers connect outlets to ONTs
- Copper Patch Cords connect ONTs to devices (computer, phone, peripherals, etc.)



Siemon Plug and Play MTP Solutions Save Space and Ease PON Deployment

Siemon's MTP fiber splitter cassettes, MTP adapter plates and MTP plug and play modules for use with MTP fiber trunks provide a quick and efficient way to deploy PONs using zone distribution.

With up to 24 LC or 12 SC fibers that transition to 12-fiber MTP ports, plug and play modules enable the use of multi-fiber MTP trunks that can be more easily deployed for backbone distribution from OLTs to the FDH while saving pathway space. From the MTP fiber splitter cassettes in the FDH, multi-fiber MTP fiber trunks provide high-density plug and play connections to zone distribution areas serving work areas. A single MTP fiber splitter cassette can provide up to 32 simplex fiber connections per zone for ONTs.

End-to-End PON Using Siemon MTP Fiber Connectivity in a Zone Configuration

Entrance Facility

- LC or SC to MTP Plug and Play Modules can be housed in RIC Enclosures or RIC Panels to deploy a fiber interconnect for MTP backbone distribution from the OLT to FDHs
- Fiber Jumpers connect ports on the OLT to the fiber interconnect
- MTP fiber trunks connect to the FDH

Fiber Distribution Hub (FDH)

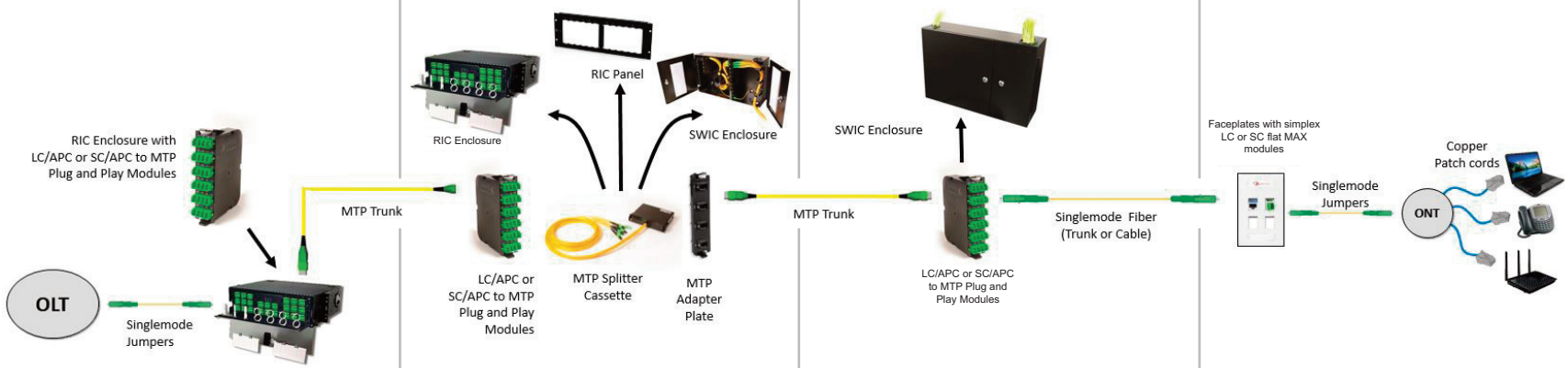
- LC or SC to MTP Plug and Play Modules, MTP Splitter Cassettes and MTP Adapter Plates can be housed in RIC Enclosures, RIC Panels or SWIC Enclosures
- RIC Enclosures, RIC Panels and Splitter Panels can be housed in any standard wall-mount cabinet
- MTP trunks connect to zone distribution

Zone Distribution

- LC or SC to MTP Plug and Play Modules can be mounted in SWIC Enclosures or RIC Panels mounted in ceiling enclosures
- When using an MTP configuration, zone distribution is required to transition back to simplex fiber to connect to ONTs in the work area

Work Area

- Faceplates use simplex LC or SC flat MAX Modules
- Singlemode Jumpers connect outlets to ONTs
- Copper Patch Cords connect ONTs to devises (computer, phone, peripherals, etc.)



Enhancing Passive Optical Networks with Structured Cabling

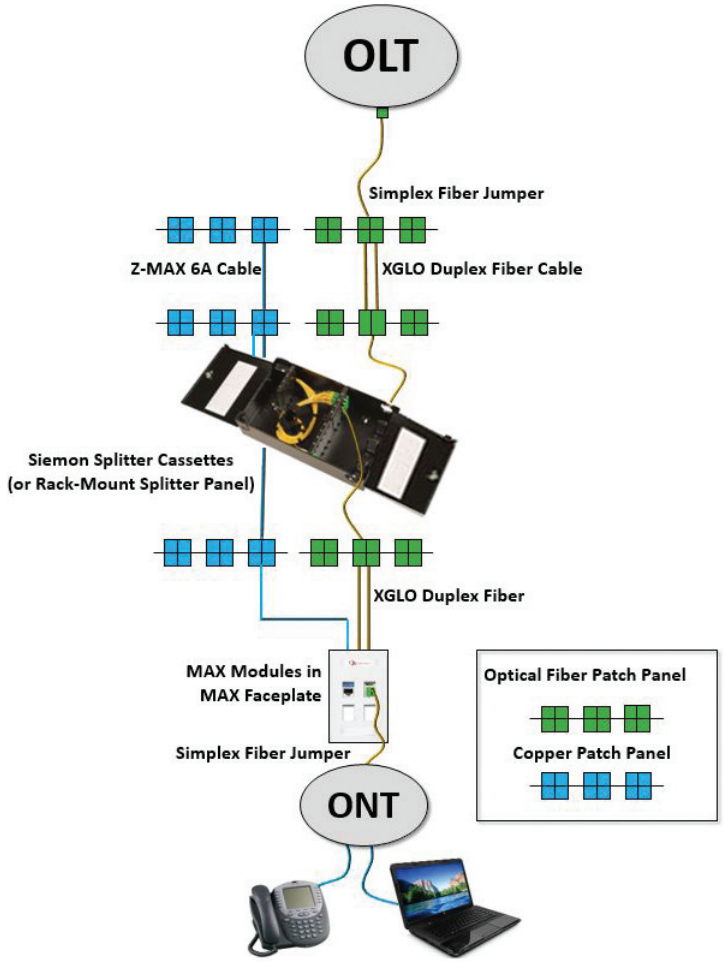
While PONs often use direct connections between OLTs, splitters and ONTs, this "point-to-point" cabling is not standards compliant and can limit flexibility. Implementing structured cabling cross-connects or interconnects using patch panels between the PON components can improve manageability.

As shown in the diagram, implementing a main cross-connect between the OLT and splitter and interconnect panels between the splitter and the ONT via patch panels improves flexibility by allowing OLT fiber ports to be easily allocated to any splitter, and splitter ports to be easily allocated to any ONT — all with just a simple patch cord change.

Adding a duplex singlemode fiber connection between the OLT and the splitter and between the splitter and the ONT provides additional support for migration to future Ethernet networking technologies, which require a duplex fiber connection for transmission. The additional fiber can also be used to provide redundancy for the system.

To ensure a standards-compliant PON system deployment, a second permanent link can be provided at the work area using a structured cabling scenario. This is typically a category 6A or higher-rated balanced twisted-pair connection, which ensures compliance with the latest TIA and ISO/IEC standards and supports adoption of remote powering technologies and high speed data transmission. Siemon Z-MAX® Category 6A system is 10GBASE-T ready and supports all remote powering applications, including Type 1 up to 4-pair enabled 100 W remote powering applications.

Siemon offers a full range of fiber and copper cables and connectivity to configure a complete end-to-end passive optical network channel.



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